Networks and the Environment
Worksheet 2

1. Draw your food web here:

2. Adjacency Matrix

Arrow To

Arrow From

Species															TOTAL
TOTAL															

3. Connectance

   (a) How many edges are in your food web (i.e. the number of 1's in your adjacency matrix)?

   (b) How many edges could there possibly be in your food web (i.e. the number of 0's or 1's in your adjacency matrix; remember to exclude the main diagonal if you do not allow self-edges)?

   (c) What is the connectance of your food web?

$$\text{Connectance} = \frac{\text{number of edges}}{\text{total number of possible edges}}$$

4. Degree Analysis

   (a) Which species are specialists (i.e. few prey species, low in-degree)?

   (b) Which species are generalists (i.e. many prey species, high in-degree)?

5. Node Deletion Experiment

Category (highest degree, etc.)	Name of Species	Added or Deleted	Number of Secondary Extinc-tions	Number of Directly Affected Species	Comments

Notes:

- Strategic choices for the node that get deleted include the one with the highest degree, the one with the lowest degree, etc.
- Can you find any keystone species?
- Is there one species you could remove that would kill everything else?
- For species additions (e.g. invasive species), think about how the addition might affect the rest of the food web (positive and negative).